

A Cold Cutting Case Study

By Hi Tech Industrial Services, 2015



Scope of Work:

Hi Tech Industrial Services were contracted on a project which involved the cutting of small man holes to 52 tanks both above and below ground to enable cleaning and decommissioning.

Over a period of two months with a 2-3 person field team working, the process was assessed by Hi Tech's technicians to benefit by using a cold cutting technique. This evaluation was made based on the type of highly flammable and poisonous contaminants in the tank and this method would eliminate any potential for ignition in a potentially volatile environment. The client also was required to minimise dust and debris emissions which the cold cutting process was able to fulfil. Once the man holes were cut and chemicals removed, the internal of each tank needed to be cleaned using high pressure water. Hi Tech used Cold Cutting to safely complete the job as it was the only method that did not create sparks, eliminating any explosions, fire and pollution.

Benefits of Cold Cutting:

Hi Tech was faced with challenges during the project that were identified as part of the pre planning and built into the Job Safety & Environment Analysis (JSEA). These challenges were met with the upmost safety considerations and teamed with our industry experience to eliminate any potential harm, to successfully achieve the client's desired outcomes. Cold Cutting proved to be the safest and most efficient method, proving beneficial as challenges became apparent. These include;

| Challenges | Hi Tech's Solutions |
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| Eliminate the danger of potential explosions | -The cold cutting process did not utilise any 'hot works' in regards to methodology, eliminating the threat of explosion when compared to conventional methods |
| Elimination of solvent and paint fumes that may potentially be present in the atmosphere | -Gas monitors and inspection caps were used prior, during and after to assess fume potency and threat to atmosphere -No hot flames or sparks are created when cold cutting, therefore eliminating fumes due to the excessive heat reacting to the solvent and paint -Cold cutting was done remotely, with the field worker away from the tank and not exposed -The water used in cold cutting would mollify the fumes, acting as a depressant to the solvent and paint -Barricades were set up to minimise exposure to field worker |
| Maintaining a clear surface to safely stick tracks for cold cutting Machine | -Utilised an excavator and digging equipment to safely remove and clear the soil, exposing the surface of the tank. In preparing for tracks to be placed and magnetics to be used to compliment requirements of cold cutting machine, high pressure water cleaned the soil off of the tank |
| Removal of waste that is free from fire, pollution or explosion due to exposed elements | -Waste was removed via a dangerous goods-vacuum truck, eliminating the threat of a fire, excessive pollution and explosion |



Benefits of Cold Cutting:

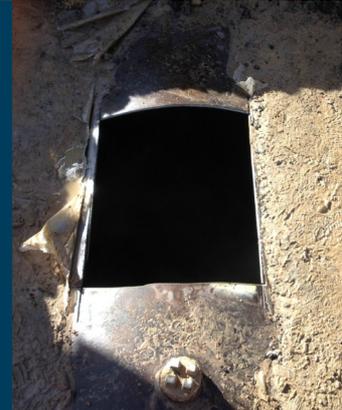
In accordance with Hi Tech's SWMS and WHS the methodology of the completed works was as follows;

1. Preparation of surface to ensure clear landing for cold cutting machine. To accomplish this, the Head Contractor supplied an excavator and digging equipment to assist whilst Hi Tech supplied strong adhesive magnets to support the machine on tracks.
2. Proper PPE equipment specific to this job. This includes but is not limited to; respiration masks, eye protection and chemical overalls.
3. Cutting of tanks using high pressure water jetting by robotics with garnet.
4. Dangerous goods vacuuming truck to suck up and dispose of the sludge, liquid and solvent waste from the tanks to better prepare for cleaning.



Outcomes:

Hi Tech successfully achieved the outcome required by the client. We cut, prepared, cleaned and removed waste from 52 tanks on site within the allocated time frame, whilst the client was able to maintain productivity. Being in an environmentally sensitive area the cold cutting process delivered, with no impacts to the surrounding precinct.



HI TECH INDUSTRIAL SERVICES

3 Watsford Rd Campbelltown
NSW 2560

PH: 1300 416 313

E: info@hitechindustrial.com.au

W: www.hitechindustrial.com.au

